

Patent
Attorney's Docket No. 005950-781

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of)
Dahl, et al.) Group Art Unit: Unassigned
Application No.: 10/052,636)
Filed: January 17, 2002)
For: PROCESSES FOR THE PURIFICATION)
OF HIGHER DIAMONDOIDS AND)
COMPOSITIONS COMPRISING SUCH)
DIAMONDOIDS)

**INFORMATION DISCLOSURE STATEMENT
TRANSMITTAL LETTER**

Assistant Commissioner for Patents
Washington, D.C. 20231

Sir:

Enclosed is an Information Disclosure Statement and accompanying form PTO-1449 for the above-identified patent application.

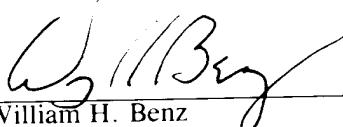
No additional fee for submission of an IDS is required.
 The fee of \$180.00 (126) as set forth in 37 C.F.R. § 1.17(p) is also enclosed.
 A certification under 37 C.F.R. § 1.97(e) is also enclosed.
 A certification under 37 C.F.R. § 1.97(e), and the fee of \$180.00 (126) as set forth in 37 C.F.R. § 1.17(p) are also enclosed.
 Charge \$_____ to Deposit Account No. 02-4800 for the fee due.
 A check in the amount of \$_____ is enclosed for the fee due.

The Commissioner is hereby authorized to charge any appropriate fees under 37 C.F.R. §§ 1.16, 1.17 and 1.21 that may be required by this paper, and to credit any overpayment, to Deposit Account No. 02-4800. This paper is submitted in duplicate.

Respectfully submitted,

BURNS, DOANE, SWECKER & MATHIS, L.L.P.

By:


William H. Benz
Registration No. 25,952

P.O. Box 1404
Alexandria, Virginia 22313-1404
(650) 622-2300

Date: 2/12/02



Patent
Attorney's Docket No. 005950-781

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of)
DAHL, et al.)
Application No.:10/052,636) Group Art Unit: Unassigned
Filed: January 17, 2002) Examiner: Unassigned
For: PROCESSES FOR THE PURIFICATION)
OF HIGHER DIAMONDOIDS AND)
COMPOSITIONS COMPRISING SUCH)
DIAMONDOIDS)
-----)

INFORMATION DISCLOSURE STATEMENT

Assistant Commissioner for Patents
Washington, D.C. 20231

Sir:

In accordance with the duty of disclosure as set forth in 37 C.F.R. § 1.56,
Applicants hereby submit the following information in conformance with 37 C.F.R. §§
1.97 and 1.98. Pursuant to 37 C.F.R. § 1.98(d), copies of the references cited below are
included herewith:

U.S. Patents

<u>Patent Number</u>	<u>Name</u>	<u>Issue Date</u>
3,457,318	Capaldi	7/22/69
3,832,332	Thompson	8/27/74
4,952,757	Alexander	8/28/90
4,952,748	Alexander	8/28/90

Information Disclosure Statement
Application Serial No. 10/052,636
Attorney's Docket No. 005950-781
Page 2

<u>Patent Number</u>	<u>Name</u>	<u>Issue Date</u>
4,952,749	Alexander	8/28/90
4,982,049	Alexander	1/1/91
5,017,734	Baum	5/21/91
5,019,665	Partridge	5/28/91
5,245,104	Cullick	9/14/93
5,268,513	Shen	12/7/93
5,298,666	Shen	3/29/94
5,306,851	Wu	4/26/94
5,347,063	Shen	9/13/94
5,369,213	Shen	11/29/94
5,380,947	Chen	1/10/95
5,382,684	Moini	1/17/95
5,397,488	Chen	3/14/95
5,410,092	Shen	4/25/95
5,414,189	Chen	5/9/95
5,430,193	Shen	7/4/95
5,461,184	Swanson	10/24/95
5,498,812	Bradway	3/12/96
5,576,355	Chen	11/19/96
6,235,851	Ishii	5/22/01

Foreign Patents

WO 95/11472	4/27/95
EP 0399 851	11/20/96

Articles

Aczel, et al., "Stability of Adamantane and its Derivatives to Coal-liquefaction Conditions, and its implications toward the organic structure of Coal", *Fuel*, Vol. 58, pp. 228-230, (3/1979)

Balaban, et al., Systemic Classification and Nomenclature of Diamond Hydrocarbons-I,
Tetrahedron, 34, pp. 3599-3606, (1978)

Badziag, P., et al., "Nanometre-sized Diamonds are More Stable than Graphite", *Nature*, Vol. 343, pp. 244-245, and 517

Bagrii, Ye, et al., "Catalytic Breakdown of Paraffinic Hydrocarbons in the Presence of Adamantanes", *Petrol. Chem USSR*, Vol. 30, No. 2, pp. 131-134, (1990)

Chung, et al., Recent Development in High-Energy Density Liquid Fuels, *Energy and Fuels*, 13, pp. 641-649, (1999)

Dahl, J., et al., Diamondoid Hydrocarbons as Indicators of Natural Oil Cracking, *Nature*, 399, pp. 54-57, (1999)

Drexler, Eric K., *Nanosystems: Molecular Machinery Manufacturing and Computation*, John Wiley & Sons, pp.238-249, (1992)

Fort, Jr., et al., Adamantane: Consequences of the Diamondoid Structure, *Chem. Rev.*, 64, pp. 277-300, (19640

Hala, V.S., et al., "Analyse Unds erwendung on Pyrolyseol", *Jahrgang*, pp. 85-87, (2/1971) In German- English Abstract on page 85.

Landa, S., "Adamantane and Its Homologues", *Current Science*, Gangalore, India, Vo. 32, pp. 485-489 (1963)

Lin, et al., Natrual Occurrence of Tetramantane ($C_{22}H_{36}$), Pentamantane ($C_{26}H_{32}$), and Hexamantane ($C_{30}H_{36}$) in a Deep Petroleum Reservoir, *Fuel*, 74:10, pp. 1512-1521, (1995)

McKervey, Synthetic Approaches to Large Diamondoid Hydrocarbonds, *Tetrahedron*, 36, pp. 971-992, (1980)

Machacek, V., et al., "Let Od Objeveni Adamantanu", *Chemicke Listy/svazek*, pp. 753-761, (1982) Russian - English Abstract on p. 761.

Oya, A., et al., "Carbonization of Adamantanes to a Graphitizable Carbon", *Fuel*, Vol. 60, pp. 667-669, (8/1981).

Petrov, A., "Hydrocarbons of Adamantane Series as Indicies of Petroleum Catagenesis Process", *Advances in Organic Geo Chemistry*, 6th International Meeting on Organic Geochemistry, pp. 517-522 (1973).

Information Disclosure Statement
Application Serial No. 10/052,636
Attorney's Docket No. 005950-781
Page 4

Prusova, D., Liquid Chromatography of Adamantanes and Carbon Adsorbents", *J. Chrom.*, 234, pp. 1-11, (1982).

Rollman, L., et al., "Adamantanes From Petroleum, with Zeolites", American Chemical Study, 210th ACS National Meeting, Abstract and paper, 8/20/95) .

Sandia National Laboratories (2000), World's First Diamond Micromachines Created at Sandia, Press Release, (2/22/2000), www.Sandia.gov

Schleyer, P., et al., "Nonacyclo[11.7.1.1^{2,18}.0^{3,16}.0^{4,13}.0^{5,10}.0^{6,14}.0^{7,11}.0^{15,20}]-Docosane, a Bastard Tetramantane", *J. of the Am. Chem. Soc.*, 90:8, letter to the editor, 8/28/68.

Shen, M., et al., "Finite T_d Symmetry Models for Diamond: From Adamantane to Superadamantane ($C_{35}H_{36}$)", *J. Am. Chem. Soc.*, Vol. 114, No. 2, pp 497-505, (1992).

Supryadkina, NY, et al., "Catalytic Dealkylation of Alkyladamantanes", *Petrol. Chem., USSR*, Vol. 28, No. 2, pp. 103-110, (1988)

Tominaga, K., et al., "Next-generation Fine Chemicals Raw Material-Adamantane", *Chem Econ & Eng. Review*, Vol. 17, No. 10, pp. 23-29, (10/1985).

Vodicka, L, et al., "High Performance Liquid Chromatography of Halogeno Derivatives of Adamantane and Diamantane", *J. Chrom.*, 270, pp. 199-205, (1983).

Wingert, W., "G.c.-m.s. Analysis of Diamondoid Hydrocarbons in Smackover Petroleums", *Fuel*, Vol. 71, pp. 37-42, (1/1992)

The Examiner's attention is directed to copending application number 10/017,821 (BDSM No. 005950-763) naming Jeremy E. Dahl, et al. as inventor(s) and filed on December 12, 2001, and the documents cited therein. A copy of this application is enclosed.

 In accordance with MPEP § 609(c)(2) (February 2000, page 600-107), the Office is requested to return a copy of this Information Disclosure Statement with the Examiner's initials adjacent to this paragraph indicating that this copending application has been considered. By citation to the copending application, confidentiality is not waived and the Office is requested to maintain the confidentiality of the copending application under 35 U.S.C. § 122.

Information Disclosure Statement
Application Serial No. 10/052,636
Attorney's Docket No. 005950-781
Page 5

The documents are being submitted within three months of the filing or entry of the national stage of this application or before the first Office Action on the merits, whichever is later, therefore no fee or certification is required under 37 C.F.R. §1.97(b).

While this Information Disclosure Statement may contain "material" information pursuant to 37 C.F.R. § 1.56, it is not intended to constitute an admission that any patent, publication or other information referred to herein is "prior art" to the invention disclosed and claimed in the above-referenced application unless specifically designated as such.

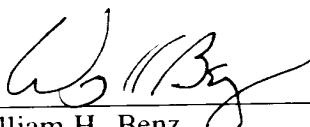
Applicants specifically reserve the right, where appropriate, to antedate any such reference by the appropriate showing under 37 C.F.R. § 1.131 and § 1.608, or any other appropriate means.

This Information Disclosure Statement is not a representation that a search has been made or that no other information material to the patentability of this invention exists. To assist the Examiner, the document are listed on the attached form PTO-1449. It is respectfully requested that an Examiner-initialed copy of this form be returned to the undersigned.

Respectfully submitted,

BURNS, DOANE, SWECKER & MATHIS, L.L.P.

By: _____

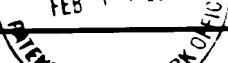

William H. Benz
Registration No. 25,952

P.O. Box 1404
Alexandria, Virginia 22313-1404
Phone: (650) 622-2300

Date:

Substitute for form 1449A PTO		ATTORNEY'S DKT No. 005950-781	APPLICATION NO. 10/052,636
INFORMATION DISCLOSURE STATEMENT BY APPLICANT		APPLICANT Dahl, et al.	
		FILING DATE January 17, 2002	GROUP Unassigned

FEB 1 6 2002

**U.S. PATENT DOCUMENTS**

Examiner Initials	Patent Document		Name of Patentee or Applicant of Cited Document	Date of Publication (MM-DD-YYYY)
	Number	Kind Code (if known)		
	3,457,318		Capaldi	7/22/69
	3,832,332		Thompson	8/27/74
	4,952,757		Alexander	8/29/90
	4,952,748		Alexander	8/28/90
	4,952,749		Alexander	8/28/90
	4,982,049		Alexander	1/1/91
	5,017,734		Baum	5/21/91
	5,019,665		Partridge	5/28/91
	5,245,104		Cullick	9/14/93
	5,268,513		Shen	12/7/93
	5,298,666		Shen	3/29/94
	5,306,851		Wu	4/26/94
	5,347,063		Shen	9/13/94
	5,369,213		Shen	11/29/94
	5,380,947		Chen	1/10/95
	5,382,684		Moini	1/17/95
	5,397,488		Chen	3/14/95
	5,410,092		Shen	4/25/95
	5,414,189		Chen	5/9/95
	5,430,193		Shen	7/4/95
	5,461,184		Swanson	10/24/95
	5,498,812		Bradway	3/12/96
	5,576,355		Chen	11/19/96
	6,235,851		Ishii	5/22/01

FOREIGN PATENT DOCUMENTS

Examiner Initials	Foreign Patent Document		Country	Date of Publication (MM-DD-YYYY)
	Number	Kind Code (if known)		
	WO 95/11472		PCT	4/27/95
	EP 0399851		Europe	11/20/96

NON PATENT LITERATURE DOCUMENTS

Examiner Initials	Include name of author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.
	Aczel, et al., "Stability of Adamantane and its Derivatives to Coal-liquefaction Conditions, and its implications toward the organic structure of Coal", <i>Fuel</i> , Vol. 58, pp. 228-230, (3/1979)

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. SEND TO: Assistant Commissioner for Patents, Washington, D.C. 20231.

Substitute for form 1449A PTO		ATTORNEY'S DKT No. 005950-781	APPLICATION NO. 10/052,636
INFORMATION DISCLOSURE STATEMENT BY APPLICANT		APPLICANT Dahl, et al.	
		FILING DATE January 17, 2002	GROUP Unassigned

	Balaban, et al., Systemic Classification and Nomenclature of Diamond Hydrocarbons-I, <i>Tetrahedron</i> , 34, pp. 3599-3606, (1978)
	Badziag, P., et al., "Nanometre-sized Diamonds are More Stable than Graphite", <i>Nature</i> , Vol. 343, pp. 244-245, and 517
O P E J C T Y FEB 14 2002 PATENT & TRADEMARK OFFICE	Bagrii, Ye, et al., "Catalytic Breakdown of Paraffinic Hydrocarbons in the Presence of Adamantanes", <i>Petrol. Chem USSR</i> , Vol. 30, No. 2, pp. 131-134, (1990)
	Chung, et al., Recent Development in High-Energy Density Liquid Fuels, <i>Energy and Fuels</i> , 13, pp. 641-649, (1999)
	Dahl, J., et al., Diamondoid Hydrocarbons as Indicators of Natural Oil Cracking, <i>Nature</i> , 399, pp. 54-57, (1999)
	Drexler, Eric K., <i>Nanosystems: Molecular Machinery Manufacturing and Computation</i> , John Wiley & Sons, pp.238-249, (1992)
	Fort, Jr., et al., Adamantane: Consequences of the Diamondoid Structure, <i>Chem. Rev.</i> , 64, pp. 277-300, (1964)
	Hala, V.S., et al., "Analyse Unds erwendung on Pyrolyseol", <i>Jahrgang</i> , pp. 85-87, (2/1971) In German- English Abstract on page 85.
	Landa, S., "Adamantane and Its Homologues", <i>Current Science</i> , Gangalore, India, Vo. 32, pp. 485-489 (1963)
	Lin, et al., Natrual Occurrence of Tetramantane ($C_{22}H_{36}$), Pentamantane ($C_{26}H_{32}$), and Hexamantane ($C_{30}H_{36}$) in a Deep Petroleum Reservoir, <i>Fuel</i> , 74:10, pp. 1512-1521, (1995)
	McKervey, Synthetic Approaches to Large Diamondoid Hydrocarbons, <i>Tetrahedron</i> , 36, pp. 971-992, (1980)
Y	Machacek, V., et al., "Let Od Objeveni Adamantanu", <i>Chemicke Listy/svazek</i> , pp. 753-761, (1982) Russian - English Abstract on p. 761.
	Oya, A, et al., "Carbonization of Adamantanes to a Graphitizable Carbon", <i>Fuel</i> , Vol. 60, pp. 667-669, (8/1981).
	Petrov, A., "Hydrocarbons of Adamantane Series as Indicies of Petroleum Catagenesis Process", <i>Advances in Organic Geo Chemistry</i> , 6 th International Meeting on Organic Geochemistry, pp. 517-522 (1973).
	Prusova, D., Liquid Chromatography of Adamantanes and Carbon Adsorbents", <i>J. Chrom</i> , 234, pp. 1-11, (1982).
	Rollman, L., et al., "Adamantanes From Petroleum, with Zeolites", American Chemical Study, 210 th ACS National Meeting, Abstract and paper, 8/20/95) .
X	Sandia National Laboratories (2000), World's First Diamond Micromachines Created at Sandia, Press Release, (2/22/2000), www.Sandia.gov
	Schleyer, P., et al., "Nonacyclo[11.7.1.1 ^{2,18} .0 ^{3,16} .0 ^{4,13} .0 ^{5,10} .0 ^{6,14} .0 ^{7,11} .0 ^{15,20}]-Docosane, a Bastard Tetramantane", <i>J. of the Am. Chem. Soc.</i> , 90:8, letter to the editor, 8/28/68.

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. SEND TO: Assistant Commissioner for Patents, Washington, D.C. 20231.

Substitute for form 1449A PTO	ATTORNEY'S DKT No. 005950-781	APPLICATION NO. 10/052,636
INFORMATION DISCLOSURE STATEMENT BY APPLICANT		
	APPLICANT Dahl, et al.	
	FILING DATE January 17, 2002	GROUP Unassigned

	Shen, M., et al., "Finite T_d Symmetry Models for Diamond: From Adamantane to Superadamantane ($C_{35}H_{36}$), <i>J. Am. Chem. Soc.</i> , Vol. 114, No. 2, pp 497-505, (1992).
	Supryadkina, NY, et al., "Catalytic Dealkylation of Alkyladamantanes", <i>Petrol. Chem., USSR</i> , Vol. 28, No. 2, pp. 103-110, (1988)
FEB 14 2002 PATENT & TRADEMARK OFFICE U.S. GOVERNMENT	Tominaga, K., et al., "Next-generation Fine Chemicals Raw Material-Adamantane", <i>Chem Econ Eng. Review</i> , Vol. 17, No. 10, pp. 23-29, (10/1985).
	Vodicka, L, et al., "High Performance Liquid Chromatography of Halogeno Derivatives of Adamantane and Diamantane", <i>J. Chrom.</i> , 270, pp. 199-205, (1983).
	Wingert, W., "G.c.-m.s. Analysis of Diamondoid Hydrocarbons in Smackover Petroleums", <i>Fuel</i> , Vol. 71, pp. 37-42, (1/1992)

Examiner
Signature

Date
Considered

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. SEND TO: Assistant Commissioner for Patents, Washington, D.C. 20231.